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Juvenile Delinquents and the Judicial System

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Nature of the Juridical Data

We are presently working on the Juvenile and Family Court records of the Province of Manitoba, Canada, covering the period of 1910 to 1960. These historical archives relating to juvenile delinquency and the juvenile court, are the only remaining set of provincial data which have escaped destruction and are available to researchers. There are about 3 000 records specifically related to the Juvenile Delinquency Act. Some 40 000 to 50 000 other records represent the remaining of these archives. They are constituted by a variety of files' subsets covering different kinds of Acts directly or indirectly related to youth or families (child protection, adoption, neglect,...). Each file contains a various amount of information. In these files, we necessarily find all the transactions between the court and the young person that appears before the judge. It also contains numerous types of documents presented to the court concerning the individual, produced by various specialists involved in the case (police, social agencies, school authorities, medical specialists,...).

Objectives of the Research

Very little is known in general and in particular in Canada about the history of juvenile courts and of their wards. Our research project encompasses three general objectives for which we have developed specific analytical and computational strategies. Our first objective is descriptive and rather »classical« in terms of criminological research. We want to be able to describe, using all available variables, the characteristics of the young persons who have come in front of the court as well as the nature of the judicial decision(s) that were taken throughout the judicial history of each youngster. Our second objective is informational and relates more directly to the behavior of the court. We identified and classified the types and the nature of documents that were used by the tribunal in assessing cases that came before the judge. Our third objective is more specific and focuses on the relation between legal and psychiatric agencies. These questions are

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treated considering the period as a whole, but also through a much more precise 'découpage* of time to identify eventual changes related to one or an other question under study.

Problems Related to the Characteristics of the Data

Each record contains various amounts of information. Basically, the transaction between the court and the youngster is reported for every infraction. The number of infractions varies substantially from one individual to the other. We have observed variations ranging from one to eighty such inscriptions. Numerous types of documents presented to the court concerning the delinquent can also be present in the file. The manner in which to represent and analyse the data is far from obvious and constitutes an important methodological problem. A second difficulty concerns the interconnection between the records of every family member. They share the same basic reference number. This enables us to search for supplementary information about one person in his sibling's records. Some connections can also be established with files concerning accomplices. Our systems must offer the possibility to interconnect the different files. The third range of problems concerns the sequentialization of the information available. We are particulary interested in the evolution of the personnel history of our youngsters. Our method must authorize the manipulation of non ordered material in view of a chronological treatment.

Research Procedures

The first step we have taken was to create two computerized data banks, of traditional format, corresponding to our two first objectives. We used the record containing all of the judicial history of the individual as our unit of data collection, as opposed to the trial as the basic unit. The first data bank contains all sociological and judicial variables describing the young person and his judicial history. The second data bank is more of a taxonomy of documents appearing in the records with some sociological information concerning the juvenile. These two data banks can be linked by using the record number of the juvenile.

The nature of our third objective concerning the relations between the penal and the psychiatric systems has led us away from the traditional computer methods for the treatment of information. More specifically, we started to explore ways to take into account the complexity and the diversity of biographies or personnel histories.

For this purpose we are using a computer assisted grammatical analysis system (SAGA-Systéme d'Analyse Grammaticale Assistée). This system has been developed at the Center of Textual Analysis by Computer (Centre

cTATO) of the University of Quebec in Montreal. It is integrated in a cognitive workbench based on Deredec Software oriented towards natural language analysis.

SAGA produces two types of arborescence: the procedural decision tree which is developed at the conception level of the model; and the instantiated tree which reflects the effective choices made on real world objects. The implementation of the SAGA system is done in two stages. First, the user must define the proper structure of representation for his data with the help of the system. He selects options from menus and the system automatically writes the necessary automats for the construction of the model. Basically, the user must declare the denomination for every branch of the decision tree, the nature of their domain (conjunction or disjunction of members, compulsory or optional, unique or repeatable character of the execution, special options for further exploration) and the type of leaves (expressions, keyboard queries, list queries, data base queries, text queries) that will grow at the end of those branches. The second stage consists in the instantiation of the model to first hand data. Once different kinds of SAGA trees have been produced (we will call them data cards), the researcher will fill them with the real information contained in the records.

Why use SAGA?

Being userfriendly, the system facilitates the manipulation of data and offers automatic programming features. If compared to a traditional data base system, SAGA is proposing a real hierarchical structure without any restriction on the number of levels. It is possible to write exploration models that will reach any level requested. It is also possible to establish connections between different data cards, not only from files to files, but from one branch of one SAGA to another branch of another SAGA.

The most important advantage is the possibility of instantiating agrammatical model. The assistance that the user is getting from SAGA is a procedural one. The grammatical theory behind the use of SAGA is dependent upon the researcher. SAGA offers a determinist way of describing data and is useful as long as the user has a grammatical theory about his object. In the present case, we are trying to represent a grammar of events for individual histories.

The use of SAGA has permitted us to conceive every step of our research procedures: representing the data, constructing new objects (inscriptions, contacts and trajectories) and proposing a complex analytical model. We still have to optimize the approach for its application on large data bases.

Analytical Model

Our analytical model is then conceived to: 1) represent many levels of information about one individual which will be considered in relation with other sets of information at different stages of the process; 2) construct, on the basis of a grammar of events, more or less complex individual trajectories; 3) explore the described data, enlarge the original database with these results and eventually explore the enriched data; 4) propose an analytic frame for the analysis of the full data. We must insist that our model is at a preliminary stage and has been experimented on small samples of data.

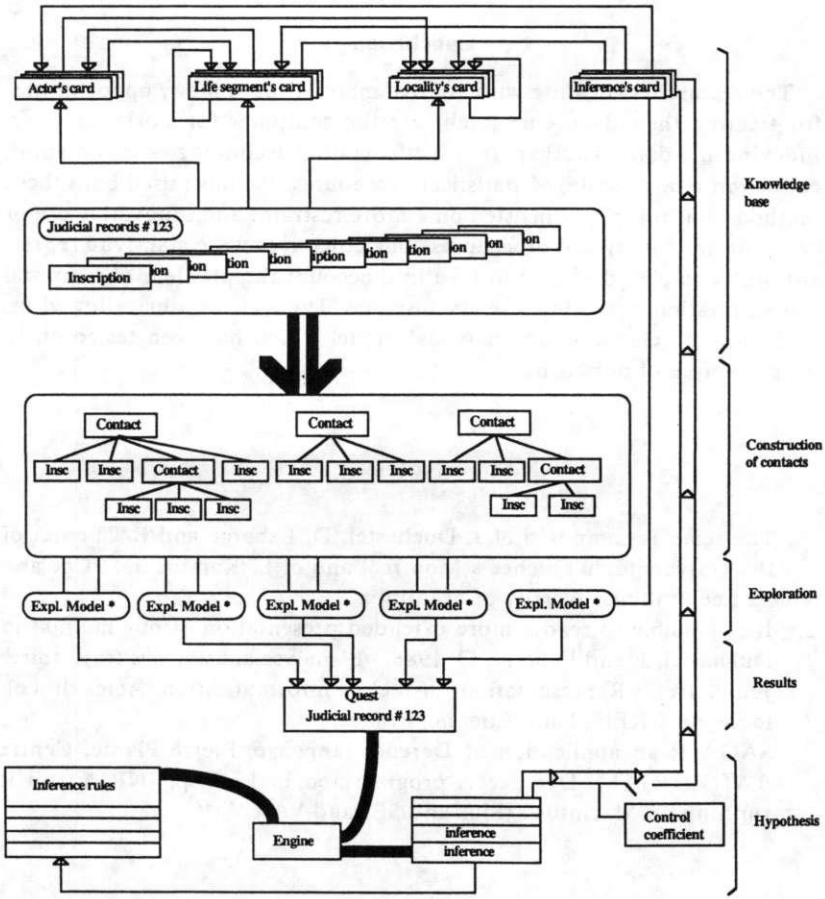
1) We have developed for the present time four types of data cards (four different SAGA trees) which represent different kinds of information contained in the records. Those card are the Actor's card, the locality's card, the life segment's card and the inscription's card. This approach permits us to avoid repeating the same information at many stages of the research process, while allowing potential interconnection of these informations.

The inscription's card is the most important one. The inscription is the smallest unity of an individual trajectory. Basically, it is the trace of one event concerning an individual, as it will appear in his record. The amount of informations about one event will vary, but one inscription must contain certain variables: its nature (how is it specified as an event), related actors (at least the delinquent and the judge), some indications on the time and location of the event. All the information about one event will serve as the raw material for the construction of the contact.

2) The second step will be the construction of the contact and the trajectory of every delinquent. A contact is the history of a complete segment of interaction between the court and the delinquent. Its content can be also extremely variable. The simplest form of a contact is an opening infraction and a closing verdict. But most contacts are far more complex. Every contact is made of a series of inscriptions reporting events about one case. There could be many court appearances, evaluations by specialists, outside intervention, temporary measures... The inscription of one infraction signals the opening of the contact and the final disposition of the court indicates the closing of the contact. Every inscription in between and pertaining to the opening infraction will be considered as part of the contact. The trajectory of an individual will be the succession or overlapping of all the judicial contacts registered in the record.

3) and 4) Once the individual trajectories have been described by SAGA, it is possible to design exploration models that will quest those descriptions and try to identify patterns about different questions. These models are capable of exploring not only the contacts and inscription cards

ANALYTICAL MODEL: SAGA



but also the other informations about the actors and the specification of time and places. SAGA being connected to a expert-system, it is possible to imagine rules that will transform into other data results produced trough the application of those explorations. Again, this new data can be easily sent back to a new data card opened to new exploration.

Conclusion

The researchers dealing with archive material have many opportunities for treating their data. One might use the computer for storing or even indexing his data. Another use of information technologies is the application, on a large scale, of statistical procedures. We have used both these methods, but this paper insisted on a more restraint and innovative use of computerized analytical procedures. Our objectives were mainly to represent very complex data and to take into account the problem of temporal transformation in the individuals' histories. The approach has allowed us, until now, to elaborate an analytical model which has been tested on limited sample of our corpus.

Notes

1. The team is composed of J. Duchastel, D. Laberge and B. Théorêt of the Université du Québec à Montréal and of L. Kaminski, S. Coe and A. Lee at the University of Manitoba.
2. It is possible to read a more extended presentation of our method in Duchastel, J. and Laberge, D. 1988. »L'analyse assistée des trajectoires judiciaires.« Représentation du réel et informatisation. Actes du colloque du CREIS, Saint-Etienne, France.
3. SAGA is an application of Deredec language, Pierre Plante, Centre d'ATO, UQAM. Deredec is programmed in Le Lisp, INRIA and is running on Macintosh (Plus and SE) and VAX-VMS.